

Application No. 09/821,664

IN THE CLAIMS:

Please cancel claim 8 without prejudice or disclaimer and amend claims 1, 6, and 18 as follows:

1. (Currently amended) A payload data unit switching engine of a payload data unit switching node, the switching engine comprising:
 - a. a payload data unit traffic management database ;
 - b. a payload data unit traffic management processor performing intensive traffic management computations in ensuring guaranteed levels of service and updating the payload data unit traffic management database; and ;
 - c. a payload data unit switching processor switching payload data unit traffic based on switching database entries subject to payload data unit traffic shaping criteria held in the traffic management database; and
 - d. notification means for notifying the payload data unit switching processor of an update of the payload data unit traffic management database.
2. (Previously presented) The payload data unit switching engine claimed in claim 1, wherein the payload data unit traffic management database stores resource utilization information, the resource utilization information specifying a current state of the payload data unit traffic conveyed by the payload data unit switching node.
3. (Previously presented) The payload data unit switching engine claimed in claim 2, wherein the resource utilization information is stored in a bit encoded form.
4. (Previously presented) The payload data unit switching engine claimed in claim 1, wherein the payload data unit traffic shaping criteria includes payload data unit traffic shaping heuristics enabling the payload data unit switching processor to enforce service level guarantee payload data unit traffic constraints on payload data unit traffic flows processed by the payload data unit switching node.
5. Cancelled.

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6. (Currently amended) The payload data unit switching engine claimed in claim 1, wherein the ~~payload data unit switching node~~ notification means further comprises information exchange means enabling communication between the payload data unit switching processor and the payload data unit traffic management processor within the payload data unit switching node.

7. Cancelled.

8. Cancelled.

9. (Previously presented) The payload data unit switching engine claimed in claim 6, wherein the information exchange means includes a working store.

10. (Previously presented) The payload data unit switching engine claimed in claim 9, wherein the working store comprises multi-ported random access memory enabling concurrent access thereto by the payload data unit switching processor and the payload data unit traffic management processor.

11. (Previously presented) The payload data unit switching engine claimed in claim 9, wherein the payload data unit traffic management processor includes the working store.

12. Cancelled.

13. (Previously presented) The payload data unit switching engine claimed in claim 6, wherein the information exchange means includes data registers internally associated with the payload data unit switching processor, the data registers storing at least a portion of the payload data unit traffic management database.

14. (Previously presented) The payload data unit switching engine claimed in claim 13, wherein the data registers comprise multi-ported random access memory enabling concurrent access thereto by the payload data unit switching processor and the payload data unit traffic management processor.

15. (Previously presented) The payload data unit switching engine claimed in claim 13, wherein the information exchange means includes a communications protocol, the communications protocol including direct memory writes to the data registers on updating the payload data unit traffic management database.

16. Cancelled.

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17. (Previously presented) The payload data unit switching engine claimed in claim 6, wherein the information exchange means further comprises at least one dedicated data bus for communication between the payload data unit switching processor and the payload data unit traffic management processor.

18. (Currently amended) A method of enforcing service level agreements for data traffic flows conveyed by a multiport data switching node, the method comprising steps of:

- a. extracting header information from a Payload Data Unit (PDU) received by a switching processor from an input port of the data switching node;
- b. querying a switching database to determine an output port to forward the PDU;
- c. querying a data traffic management database maintained by a data traffic management processor, the data traffic management database storing data traffic management information;
- d. processing the PDU subject to data traffic constraints and current states of the data traffic flows included in the data traffic management information;
- e. selectively providing feedback information to the data traffic management processor regarding actions taken by the switching processor in processing the PDU; and
- f. updating the data traffic management database upon computing a current state of the data traffic flows based on the provided feedback information.

~~whereby the switching processor is relieved of intensive data traffic management computations:~~

19. (Original) A method as claimed in claim 18, wherein processing the PDU the method further comprises a step of processing the PDU subject to data traffic shaping heuristics providing data traffic flow control for the input port.

20. (Original) A method as claimed in claim 18, wherein processing the PDU the method further comprises a step of processing the PDU subject to data traffic shaping heuristics providing data traffic flow control for the output port.

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21. (Original) A method as claimed in claim 18, wherein computing the current state of the data traffic flows the method further comprises the step of querying a service level agreement database associated with the traffic management processor to determine service level guarantees.

22. (Original) A method as claimed in claim 18, wherein processing the PDU the method further comprises a step of processing the PDU subject to data traffic shaping heuristics providing data traffic flow control for the output port.